

variations are, how they are acquired and under what conditions, is material which can also be used in the greater question of the evolution of present-day nature.

January 26, 1939.

E. C. S. B.

XI.—THE SUN AS A MORTALITY FACTOR AMONG YOUNG BIRDS.

(*With a plate*).

Early this month, I revisited the colony of Little Terns (*Sterna a. albifrons*) off Salsette, (vide *J.B.N.H.S.* xl, p. 635), with Messrs. McCann and Fernandes.

We landed at 10-30 a.m., and at our approach the birds left their nests and circled over-head. There were some 100 nests on the islet, all with two or three eggs. About six nests had a single hatchling with two eggs, and a cursory examination together with attempts to photograph the chicks and nests kept the parents off their nests. At 10-45 one of the hatchlings was seen to have collapsed, obviously overcome by the heat.

We immediately retired into a clump of mangrove some 15 ft. from the 'plateau' on which the birds nested.

The ternlets were back at their eggs in five minutes, and soon became so accustomed to our presence that we crept out of the mangrove, and were lying out in the open, with birds coming down to their nests hardly 10 ft. away. No bird, however, stayed on its eggs for more than a minute, and after about half an hour, we retreated and watched the birds from a distance. There was however no change in their behaviour. After a minute or so, the bird was replaced by its mate, and flew out to sea. With its head to the wind, it dipped, touched the water with its breast, and flew back to the nest. The shine on the eggs showed that they had been wetted, and the mate took off again to repeat the process. We watched numerous nests between 11 a.m. and noon, and the procedure appeared unvaried.

The first alarm and consequent exposure of about 20 minutes had proved too much for the hatchlings, and every one in a nest with eggs was found dead. The only chicks left alive were two in one nest, and these must, of course, have been slightly older than the single hatchlings with eggs.

The day was cloudless and hot, but did the parents react to changes in temperature? Or is this monotonous cycle of wetting the eggs and young instinctive, and kept on indefinitely throughout the incubation period? Do the eggs go bad as quickly as the chicks are affected? In *J.B.N.H.S.*, xxiv, p. 575. Currie has drawn attention to Black-bellied Terns (*S. melanogaster*) wetting their eggs at noon, and it is unfortunate that Uttan Washi is too difficult of access to permit detailed observation,

The ternlets were seen carrying fish, and their remains on the islet seemed to indicate that they formed an important part of their food.

Many interesting questions appear to be raised by these observations, and notes from other sources would be of interest.

HUMAYUN ABDULALI.

BOMBAY,

June 28, 1939.

[Specimens of the fish forming the food of the terns collected by the writer were identified by Dr. Hora as:—

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| 1. <i>Clupeoides lile</i> (C.V.) | ... | ... | 7 specimens |
| 2. <i>Scombermorus guttatus</i> (Bl. & Sch.) | ... | ... | 1 specimen |
| 3. <i>Hemiramphus</i> sp. | ... | ... | 1 specimen |

The instance recorded by Mr. A. J. Currie in his paper on the Birds of Lahore describes the nesting of the Black-bellied Tern (*Sterna melanogaster*) on the river Ravi at Lahore he says that 'During the middle of the day the birds do not appear to sit at but only to stand over their eggs to protect them from the sun and the eggs I found near Lahore were besprinkled all over with water—apparently as an additional precaution on the part of the birds to prevent them from becoming over heated'. The Egyptian Plover (*Pluvianus aegyptius*) is said to moisten its eggs in a similar manner. Dewar (*Birds at the Nest* p. 36) records that he noticed at Ghazipur that the eggs of terns and skimmers laid late in the season were all deposited on damp sand. Various means are adopted by birds to protect their eggs and young from the sun, particularly in tropical countries. Birds which lay their eggs on the ground in exposed positions resort to three methods of protecting them, i.e. covering them with sand; standing by or over the eggs during the day to shelter them from the rays of the sun; or, as in the instance of the terns recorded above, keeping them moist. Similar protection is accorded to the young by hovering with wings expanded over the nest during the hotter part of the day or in other ways using their bodies as a sun screen.—EDS.]

XII.—ON THE OCCURRENCE OF THE EUROPEAN REDSTART (*PHOENICURUS PHOENICURUS*) IN BRITISH BALUCHISTAN.

As regards my specimen of the European Redstart (*Phoenicurus phoenicurus*), I obtained one from a number passing through Robat in N. W. corner of British Baluchistan on 1st April 1939, and saw others I took to be this species at Kacha 40 miles S. E. of Robat on 22nd April 1939.

I sent my specimen to you, and you kindly sent it on to Dr. Ticehurst who identified it for me.

Phoenicurus ochrurus phoenicuroides (The Western Indian Red-